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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,917	02/27/2002	Carl Mizuyabu	1376.0200090	4834

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EXAMINER

PATEL, NITIN C

ART UNIT	PAPER NUMBER
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2116

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/083,917	Applicant(s) MIZUYABU ET AL.	
	Examiner Nitin C. Patel	Art Unit 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>18 November 2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 41 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5 – 23, 27 – 30, 32 – 33, 35 – 41 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Nitta et al. [hereinafter as Nitta], US Patent 6,625,207 B1.

4. As to claims 1, and 20, Nitta discloses method comprising the steps of:

a. identifying a first display content [display data] to be displayed [data held in holding circuit] at a first time [it is inherent to sequentially inputted data, col. 5, lines 9 - 11];

b. identifying a second display content [display data] to be displayed [data received] at a second time, wherein the second time is after the first time [it is inherent to sequentially inputted data, col. 5, lines 9 - 11];

c. providing display data to a display port [4000, Liquid Crystal Panel, fig. 1] at a first frame [24 bits] rate [number of bits per unit time/clock], when the first display

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content [display data] [data in holding circuit] is different from the second display content [data received]; and

d. providing display data to the display port at a second frame [3 bits] rate [number of bits per unit time], when the first display content [display data] is substantially the same as the second display content, wherein the second frame [3 bits] rate [number of bits per unit time/clock] is less than the first frame rate [3 is less than 24] [col. 11, lines 22 – 32, fig. 1,2, 5] [abstract, col. 5, lines 45 – 67, col. 6, lines 1 – 63, col. 7, lines 1 – 67, col. 8, lines 1 – 64, col. 9, lines 1 - 65].

5. As to claims 28, and 34 Nitta discloses a system comprising:

a. a content analyzer [comparator] to compare a first display content [data held in holding circuit] to be displayed at a first time [it is inherent to sequentially inputted data, col. 5, lines 9 - 11] with a second display content [data received] to be displayed at a second time, wherein the second time is after the first time [it is inherent to sequentially inputted data, col. 5, lines 9 - 11];

b. a display module [LCD apparatus, fig. 1] to alter [change] a frame rate [number of bits per unit time/clock] for providing display data to a display port, wherein said frame rate is based on the comparison performed by said content analyzer [comparator] ; and said display port to output said display data [[col. 11, lines 22 – 32, fig. 1,2, 5] [abstract, col. 5, lines 45 – 67, col. 6, lines 1 – 63, col. 7, lines 1 – 67, col. 8, lines 1 – 64, col. 9, lines 1 - 65].

6. As to claims 5, 29, and 35, Nitta discloses the steps of:

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a. representing the display data using a first number of bits [24 bits], when the first display content [data held in holding circuit] is different from the second display content [data received]; and

b. representing the display data using a second number of bits [3 bits], when the first display content is substantially the same as the second display content, wherein the second number of bits is less than the first number of bits [3 is less than 24][col. 11, lines 22 – 32].

7. As to claims 6, 21, and 36, Nitta discloses the number of bits [24 nits] associated with a color depth [R, G, and B][col. 6, lines 59 – 63, col. 7, lines 7 – 13, fig. 4B – 4J].

8. As to claim 7, Nitta discloses activating a first number of interface lines [21] associated with the display port [4000, Liquid Crystal Panel, fig. 1], when the first display content [data held in holding circuit] is different from the second display content [data received]; and activating a second number of interface lines [24] associated with the display port [4000, Liquid Crystal Panel, fig. 1], when the first display content is substantially the same as the second display content, wherein the second number of control lines [3] is less than the first number of control lines [24] associated with the display port [col. 11, lines 22 – 32, fig. 1, 5].

9. As to claims 8, and 37, Nitta teaches the interface lines including one of digital to analog converter input lines [data drivers], transition minimized differential signaling input lines, or low voltage differential signaling input lines [col. 14, lines 21 – 50, col. 16, lines 53 – 65, col. 17, lines 9 – 21, col. 18, lines 18 – 20, and 43 – 55, fig. 1].

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10. As to claims 9, and 33, Nitta discloses identifying a third display content to be displayed at a third time, wherein the third time is after the second time [inherent to the sequential display data]; providing display data with a first color depth [RGBx8 bits or 24 bits], when the third display content is different from the first display content; and providing display data with a second color depth, when the third display content is substantially the same as the first display content, when the second color depth is less than the first color depth [col. 11, lines 22 – 32, col. 15, lines 20 – 67, col. 16, lines 1 – 40, fig. 4B-4J].

11. As to claims 10 – 12, and 38 – 39, Nitta discloses a LCD, which can be used in association with different types of data processing devices including portable device, and personal digital assistant.

12. As to claims 13 – 15, and 22 – 23, Nitta discloses a liquid crystal display [LCD] which can be applicable to which can be used in association with different types [personal digital assistant] of data processing devices to output display [fig. 1].

13. As to claims 16, 27, 32, and 41, Nitta discloses the steps of supporting a first nominal power [normal power consumption], when the first display content is different from the second display content; and supporting a second nominal power [reduced power consumption], when the first display content is substantially the same as the second display content, wherein the second nominal power is less than the first nominal power [col.3, lines 22 – 25, col. 17, lines 9 – 21].

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14. As to claims 17 – 19, Nitta discloses low power consumption data transmission for display data including video signal therefore, he teaches video and audio data [col. 1, lines 19 –20].

15. As to claim 29, Nitta discloses storage of first display content in memory [holding circuit][fig.1].

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Claims 2 – 4, 24 – 26, 31, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nitta et al. [hereinafter as Nitta], US Patent 6,625,207 B1 as applied to claims 1, 5 – 23, 27 – 30, 32 – 33, 35 – 41 above, and further in view of Mirov et al. [hereinafter as Mirov], US Patent 6,691,215 B1.

18. As to claims 2, 24, 31, and 34, Nitta discloses a liquid crystal display [LCD] and method for low power consumption by comparing data in holding circuit and data

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received and outputting signals and based on comparison results from comparator and encoder outputs it outputs 24 bits if data in holding circuits are different from the received data and output 3 bits if data in holding circuit and received data are identical [whole document].

However, Nitta does not teach to use the comparison result and encoder outputs for enabling first clock rate the data in holding circuit and received data are different, and second clock rate when data in holding circuit and received data are identical. In summary, Nitta teaches to judge whether both data are different or same by comparison and outputting a signal but does not teach to use the output signals to enable the first and second clock rate.

Mirov discloses an apparatus and method for enabling a first clock rate [enabling PLL] and second clock rate [disabling PLL] using multiplexer [1010, fig. 1] based on the select signal [PLL_BYPASS] wherein second clock rate [PLL disabled] is less than the first clock rate [col. 4, lines 43 - 67, col. 6, lines 49 - 67, col. 7, lines 1 - 20, col. 8, lines 65 - 67, col. 9, lines 1 - 14, col. 13, lines 14 - 52, col. 15, lines 64- 67, col. 16, lines 1 - 67, col. 17, lines 1 - 5, fig. 10].

It would have been obvious to one of ordinary skill in art, having the teachings of Nitta and Mirov before him at the time of invention was made, to modify the frame rate [number of bits per unit time/clock] alteration based on comparator output with encoded bits as disclosed by Nitta to include enabling a first clock rate [enabling PLL] and enabling second clock rate [disabling PLL] based on selection signal [PLL_BYPASS] as taught by Mirov, in order to obtain a system that track and record the information on an

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hourly, daily, weekly, monthly, etc. basis and recorded information is periodically analyzed to identify activity trends and may then be used to modify the rate at which system is allowed to transition between the normal, reduced power, and idle modes [col. 25, lines 14 – 28].

19. As to claims 3, and 25, Mirov discloses providing a clock signal associated with an Oscillator to a phase locked loop and a locked signal generated by the phased locked loop [fig. 5, 10].

20. As to claim 4, Mirov discloses disabling the phased locked loop [with PLL_BYPASS] and providing the clock signal associated with the oscillator [VCO] [fig. 5, 10].

21. **Examiner's Note:** Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested to the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

22. **Prior Art not relied upon:** Please refer to the references listed in attached PTO-892, which, are not relied upon for rejection since these references are relevant to the claimed invention.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin C. Patel whose telephone number is 571-272-3675. The examiner can normally be reached on 6:45 am to 5:15 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nitin C. Patel
February 10, 2005


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